LISTING OF CLAIMS

Claims 1-32 (Previously cancelled)

33. (Currently amended) A method of treating cancer in an animal or a human having the cancer comprising:

(a) ~~administration of~~ administering at the cancer in the animal or the human having the cancer a composition comprising *Mycobacterium phlei* (*M.phlei*)-DNA complexed on *Mycobacterium phlei* cell wall (MCC) and a pharmaceutically acceptable carrier; and

(b) ~~administration of~~ administering a chemotherapeutic agent to ~~an~~ the animal or ~~a~~ the human having the cancer, wherein the composition and the chemotherapeutic agent administered to the animal or the human having the cancer display an anti-cancer synergism.

34. (Previously added) The method of Claim 33, wherein the anti-cancer synergism is potentiation.

35. (Previously added) The method of Claim 33, wherein the composition induces cell cycle arrest in cells of the cancer, inhibits proliferation of cells of the cancer, induces apoptosis in cells of the cancer, or synchronizes cell cycles of cells of the cancer.

36. (Previously added) The method of Claim 33, wherein the cancer is leukemia, lymphoma or melanoma.

37. (Previously added) The method of Claim 33, wherein cells of the cancer display resistance against one or more chemotherapeutic agents.

38. (Previously added) The method of Claim 33, wherein the chemotherapeutic agent is administered before, after, or concurrently with the administration of the composition.

39. (Previously added) The method of Claim 33, wherein the chemotherapeutic agent is a DNA cross-linking agent, a DNA depolymerizing agent, an antimetabolic agent, an anti-tumor antibiotic agent, a topoisomerase inhibiting agent or a tubulin stabilizing agent.

40. (Previously added) The method of Claim 33, wherein the chemotherapeutic agent is mitomycin-C, 5-fluorouracil, or cisplatin.

41. (Currently amended) A method of treating cancer in an animal or a human having the cancer comprising:

(a) ~~administration of~~ administering at the cancer in the animal or the human having the cancer a composition comprising *Mycobacterium phlei* (*M.phlei*)-DNA (M-DNA) and a pharmaceutically acceptable carrier; and

(b) ~~administration of~~ administering a chemotherapeutic agent to ~~an~~ the animal or ~~a~~ the human having the cancer, wherein the composition and the chemotherapeutic agent administered to the animal or the human having the cancer display an anti-cancer synergism.

42. (Previously added) The method of Claim 41, wherein the anti-cancer synergism is potentiation.

43. (Previously added) The method of Claim 41, wherein the composition induces cell cycle arrest in cells of the cancer, inhibits proliferation of cells of the cancer, induces apoptosis in cells of the cancer, or synchronizes cell cycles of cells of the cancer.

44. (Previously added) The method of Claim 41, wherein the cancer is leukemia, lymphoma or melanoma.

45. (Previously added) The method of Claim 41, wherein cells of the cancer display resistance against one or more chemotherapeutic agents.

46. (Previously added) The method of Claim 41, wherein the chemotherapeutic agent is administered before, after, or concurrently with the administration of the composition.

47. (Previously added) The method of Claim 41, wherein the chemotherapeutic agent is a DNA cross-linking agent, a DNA depolymerizing agent, an antimetabolic agent, an anti-tumor antibiotic agent, a topoisomerase inhibiting agent or a tubulin stabilizing agent.

48. (Previously added) The method of Claim 41, wherein the chemotherapeutic agent is mitomycin-C, 5-fluorouracil, or cisplatin.

49. (Currently amended) A method of treating cancer in an animal or a human having the cancer comprising:

(a) ~~administration of~~ administering at the cancer in the animal or the human having the cancer a composition comprising a mycobacterial DNA complexed on mycobacterial cell wall (BCC), and a pharmaceutically acceptable carrier; and

(b) ~~administration of~~ administering a chemotherapeutic agent to ~~an~~ the animal or ~~a~~ the human having the cancer, wherein the composition and the chemotherapeutic agent administered to the animal or the human having the cancer display an anti-cancer synergism.

50. (Previously added) The method of Claim 49, wherein the anti-cancer synergism is potentiation.

51. (Previously added) The method of Claim 49, wherein the composition induces cell cycle arrest in cells of the cancer, inhibits proliferation of cells of the cancer, induces apoptosis in cells of the cancer, or synchronizes cell cycles of cells of the cancer.

52. (Previously added) The method of Claim 49, wherein the cancer is leukemia, lymphoma or melanoma.

53. (Previously added) The method of Claim 49, wherein cells of the cancer display resistance against one or more chemotherapeutic agents.

54. (Previously added) The method of Claim 49, wherein the chemotherapeutic agent is administered before, after, or concurrently with the administration of the composition.

55. (Previously added) The method of Claim 49, wherein the chemotherapeutic agent is a DNA cross-linking agent, a DNA depolymerizing agent, an antimetabolic agent, an anti-tumor antibiotic agent, a topoisomerase inhibiting agent or a tubulin stabilizing agent.

56. (Previously added) The method of Claim 49, wherein BCC is derived from *M. vaccae, M. chelonei, M. smegmatis, M. terrae, M. duvalii, M. tuberculosis, M. bovis BCG, M. avium, M. Szulgai, M. scrofulaceum, M. xenopi, M. kansaii, M. gastr, M. fortuitous,* or *M. asiaticum.*

57. (Currently amended) A method of treating cancer in an animal or a human having the cancer comprising:

(a) ~~administration of~~ administering at the cancer in the animal or the human having the cancer a composition comprising a mycobacterial DNA (B-DNA), and a pharmaceutically acceptable carrier; and

(b) ~~administration of~~ administering a chemotherapeutic agent to ~~an~~ the animal or ~~a~~ the human having the cancer, wherein the composition and the chemotherapeutic agent administered to the animal or the human having the cancer display an anti-cancer synergism.

58. (Previously added) The method of Claim 57, wherein the anti-cancer synergism is potentiation.

59. (Previously added) The method of Claim 57, wherein the composition induces cell cycle arrest in cells of the cancer, inhibits proliferation of cells of the cancer, induces apoptosis in cells of the cancer, or synchronizes cell cycles of cells of the cancer.

60. (Previously added) The method of Claim 57, wherein the cancer is leukemia, lymphoma or melanoma.

61. (Previously added) The method of Claim 57, wherein cells of the cancer display resistance against one or more chemotherapeutic agents.

62. (Previously added) The method of Claim 57, wherein the chemotherapeutic agent is administered before, after, or concurrently with the administration of the composition.

63. (Previously added) The method of Claim 57, wherein the chemotherapeutic agent is a DNA cross-linking agent, a DNA depolymerizing agent, an antimetabolic agent, an anti-tumor antibiotic agent, a topoisomerase inhibiting agent or a tubulin stabilizing agent.

64. (Previously added) The method of Claim 57, wherein B-DNA is derived from *M. vaccae, M. chelonei, M. smegmatis, M. terrae, M. duvalii, M. tuberculosis, M. bovis BCG, M. avium, M. Szulgai, M. scrofulaceum, M. xenopi, M. kansaii, M. gastr, M. fortuitous,* or *M. asiaticum*.

65. (New) The method of Claim 33, wherein administering the composition at the cancer occurs through a route selected from the group consisting of oral, topical, subcutaneous, transdermal, subdermal, intramuscular, intraperitoneal, intraarticular, intravesical, intraarterial, intravenous, intradermal, intracranial, intralesional, intratumoral, intraocular, intrapulmonary, intraspinal, placement within a body cavity, nasal inhalation, pulmonary inhalation, impression into skin and electroporation.

66. (New) The method of Claim 41, wherein administering the composition at the cancer occurs through a route selected from the group consisting of oral, topical, subcutaneous, transdermal, subdermal, intramuscular, intraperitoneal, intraarticular, intravesical, intraarterial, intravenous, intradermal, intracranial, intralesional, intratumoral, intraocular, intrapulmonary, intraspinal, placement within a body cavity, nasal inhalation, pulmonary inhalation, impression into skin and electroporation.

67. (New) The method of Claim 48, wherein administering the composition at the cancer occurs through a route selected from the group consisting of oral, topical, subcutaneous, transdermal, subdermal, intramuscular, intraperitoneal, intraarticular, intravesical, intraarterial, intravenous, intradermal, intracranial, intralesional, intratumoral, intraocular, intrapulmonary, intraspinal, placement within a body cavity, nasal inhalation, pulmonary inhalation, impression into skin and electroporation.

68. (New) The method of Claim 57, wherein administering the composition at the cancer occurs through a route selected from the group consisting of oral, topical, subcutaneous, transdermal, subdermal, intramuscular, intraperitoneal, intraarticular, intravesical, intraarterial, intravenous, intradermal, intracranial, intralesional, intratumoral, intraocular, intrapulmonary, intraspinal, placement within a body cavity, nasal inhalation, pulmonary inhalation, impression into skin and electroporation.